

Figure 1: A block diagram of one preferred system architecture

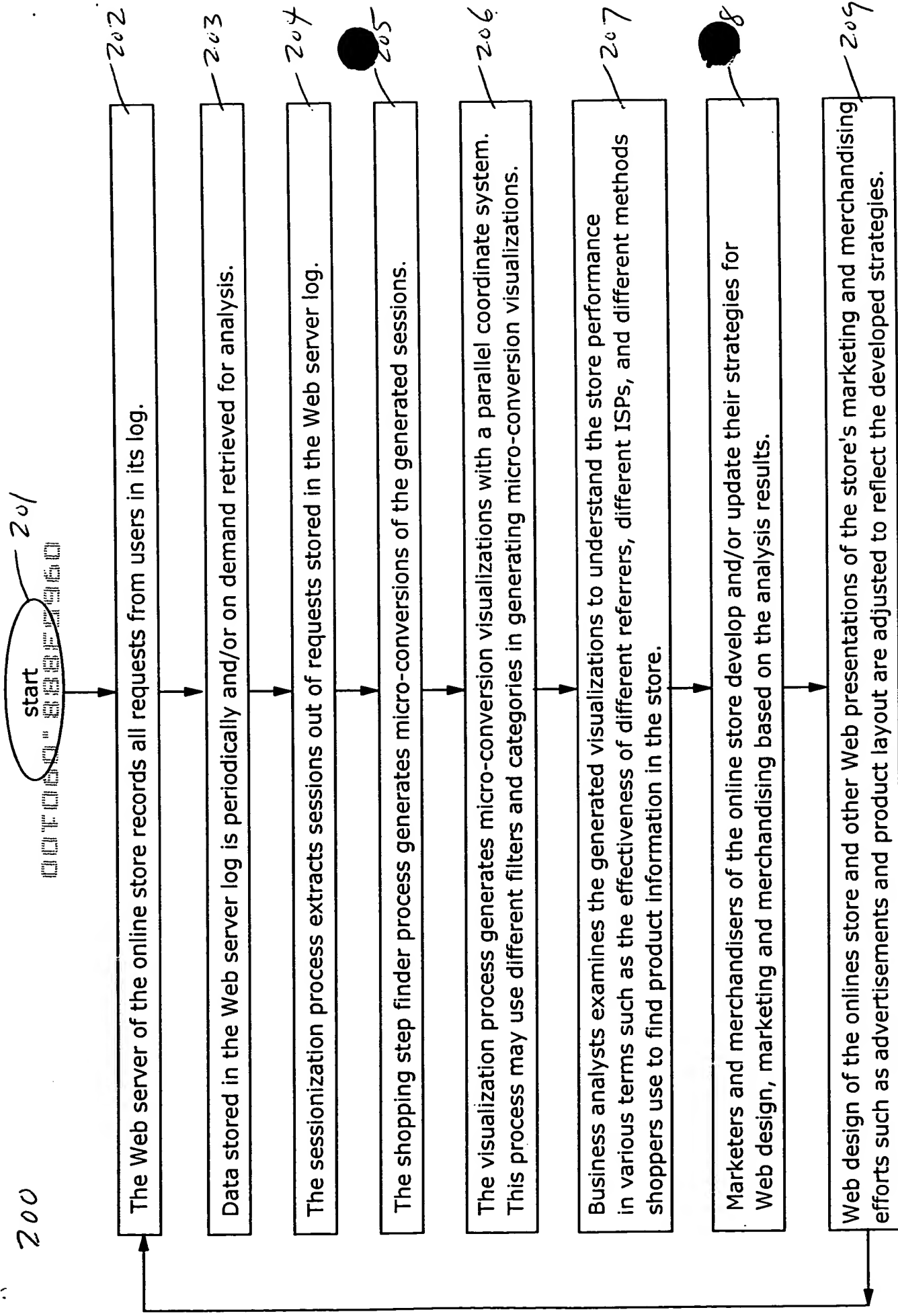


Figure 2: A flow chart of a preferred business process

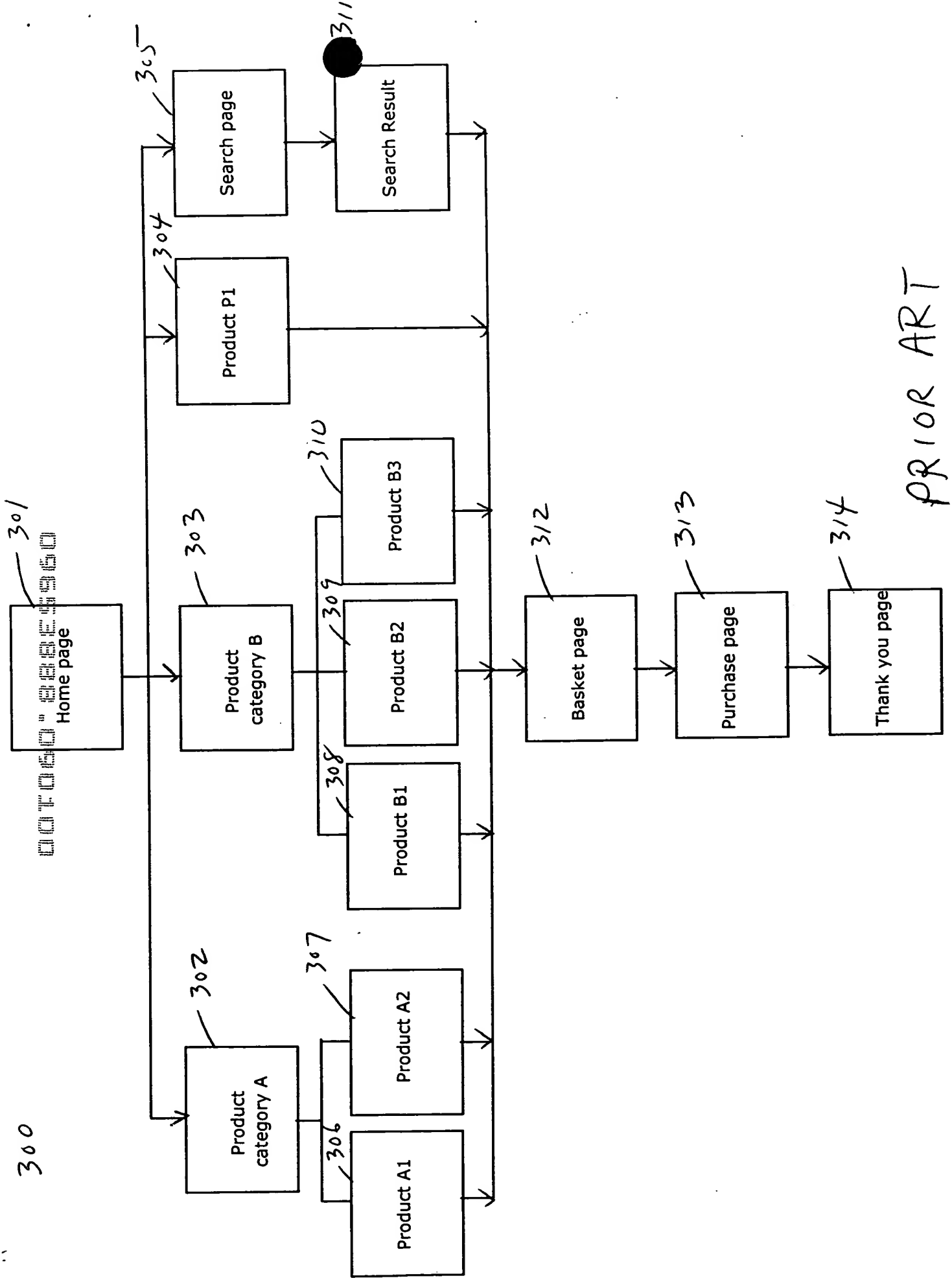


Figure 3: An example of an online store structure

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 class 99
 class 100

Timestamp	Session ID	Referrer	Current Page	Links
T1	S1	R1	Home	A, B, P1, Search
T2	S2	R2	Home	A, B, P1, Search
T3	S1	Home	A	A1, A2
T4	S3	R3	Home	A, B, P1, Search
T5	S2	Home	Search	
T6	S1	A	A1	Basket, A
T7	S3	Home	P1	Basket
T8	S1	A1	Basket	Purchase, Home
T9	S2	Search	Search Result	A2, B1, B2
T10	S1	Basket	Home	A, B, P1, Search
T11	S2	Search Result	B1	Basket, B
T12	S1	Home	B	B1, B2, B3
T13	S1	B	B2	Basket, B
T14	S1	B2	B	B1, B2, B3
T15	S2	B1	Basket	Purchase, Home
T16	S1	B	B3	Basket, B
T17	S2	Basket	Purchase	Thank You
T18	S3	P1	Home	A, B, P1, Search
T19	S1	B3	Basket	Purchase, Home
T20	S1	Basket	Purchase	Thank You
T21	S1	Purchase	Thank You	Home
T22	S3	Home	A	A1, A2
T23	S2	Purchase	Thank You	Home

Figure 4: An example of a Web server log of an online store

504 505 506 507 508

Timestamp	Session ID	Referrer	Current Page	Links
T1	S1	Referrer	Home	A, B, P1, Search
T3	S1	Home	A	A1, A2
T6	S1	A	A1	Basket, A
T8	S1	A1	Basket	Purchase, Home
T10	S1	Basket	Home	A, B, P1, Search
T12	S1	Home	B	B1, B2, B3
T13	S1	B	B2	Basket, B
T14	S1	B2	B	B1, B2, B3
T16	S1	B	B3	Basket, B
T19	S1	B3	Basket	Purchase, Home
T20	S1	Basket	Purchase	Thank You
T21	S1	Purchase	Thank You	Home

(a) Session S1 — 501

(b) Session S2 — 502

Timestamp	Session ID	Referrer	Current Page	Links
T2	S2	R2	Home	A, B, P1, Search
T5	S2	Home	Search	
T9	S2	Search	Search Result	A2, B1, B2
T11	S2	Search Result	B1	Basket, B
T15	S2	B1	Basket	Purchase, Home
T17	S2	Basket	Purchase	Thank You
T23	S2	Purchase	Thank You	Home

(c) Session S3 — 503

Timestamp	Session ID	Referrer	Current Page	Links
T4	S3	R3	Home	A, B, P1, Search
T7	S3	Home	P1	Basket
T18	S3	P1	Home	A, B, P1, Search
T22	S3	Home	A	A1, A2

Figure 5: An example of sessions in an online store

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Product impressions	Clickthroughs	Basket placement	Purchase
T1, P1	T6, A1	T8, A1	T20, A1
T3, A1	T13, B2	T19, B3	T20, B3
T3, A2	T16, B3		
T10, P1			
T12, B1			
T12, B2			
T12, B3			
T14, B1			
T14, B2			
T14, B3			

(a) Micro-conversions of session S1 — 601

Product impressions	Clickthroughs	Basket placement	Purchase
T2, P1	T11, B1	T15, B1	T17, B1
T9, A2			
T9, B1			
T9, B2			

(b) Micro-conversions of session S2 — 602

Product impressions	Clickthroughs	Basket placement	Purchase
T4, P1	T7, P1		
T18, P1			
T22, A1			
T22, A2			

(c) Micro-conversions of session S3 — 603

Figure 6: An example of micro-conversions in an online store

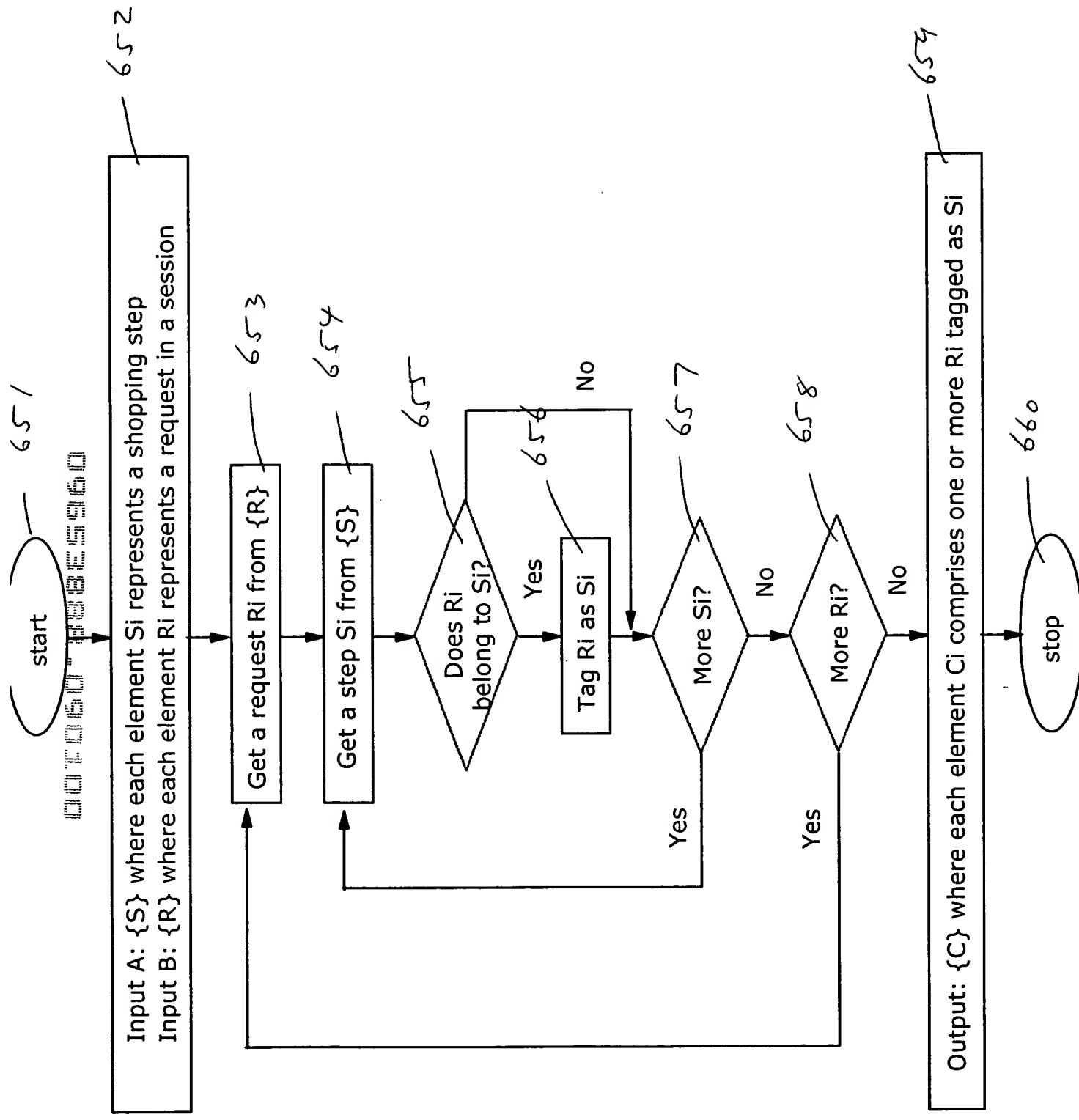


Figure 6A: A flow chart of a shopping step finder process

700

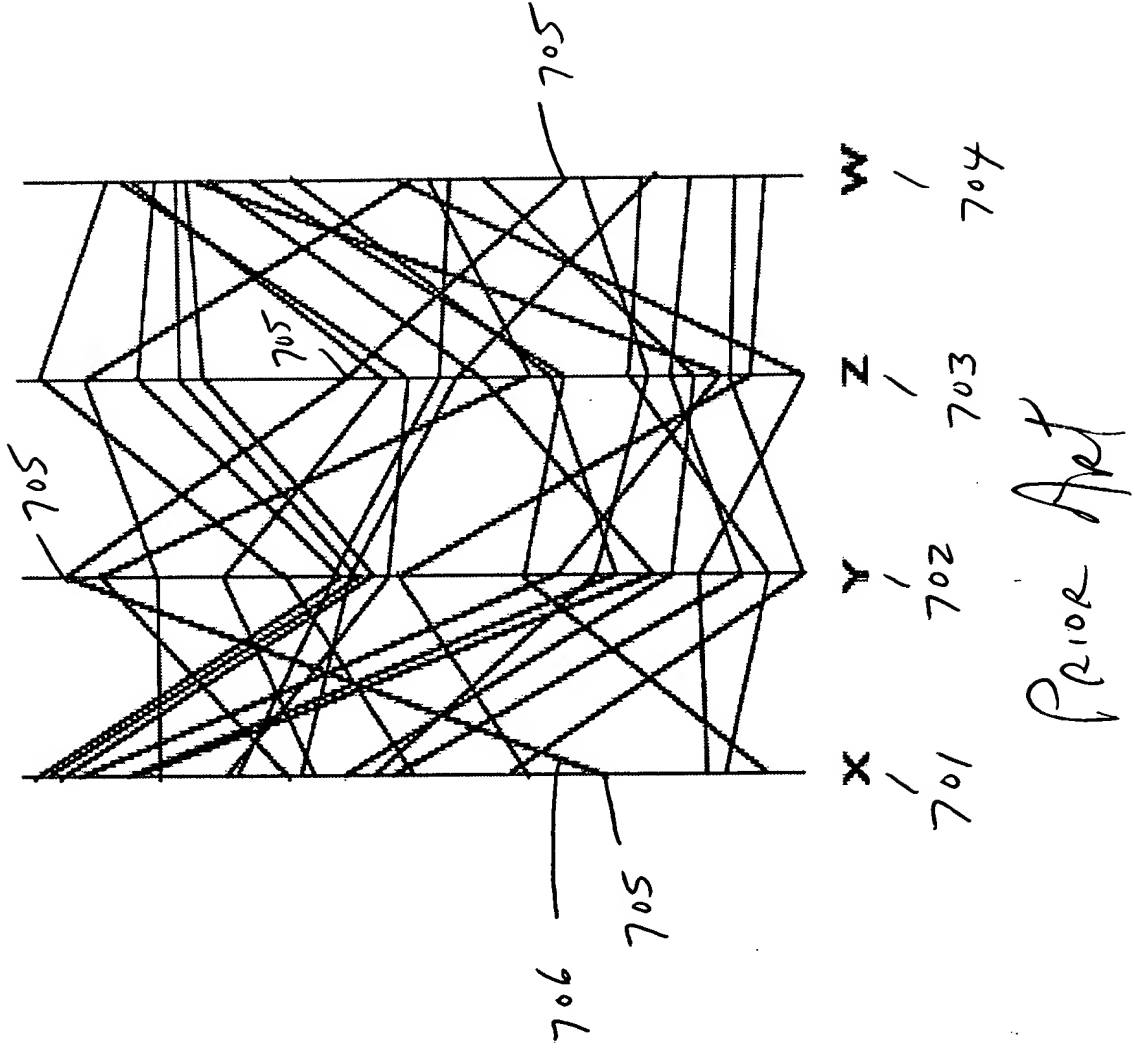


Figure 7: An example of a traditional parallel coordinate system

800

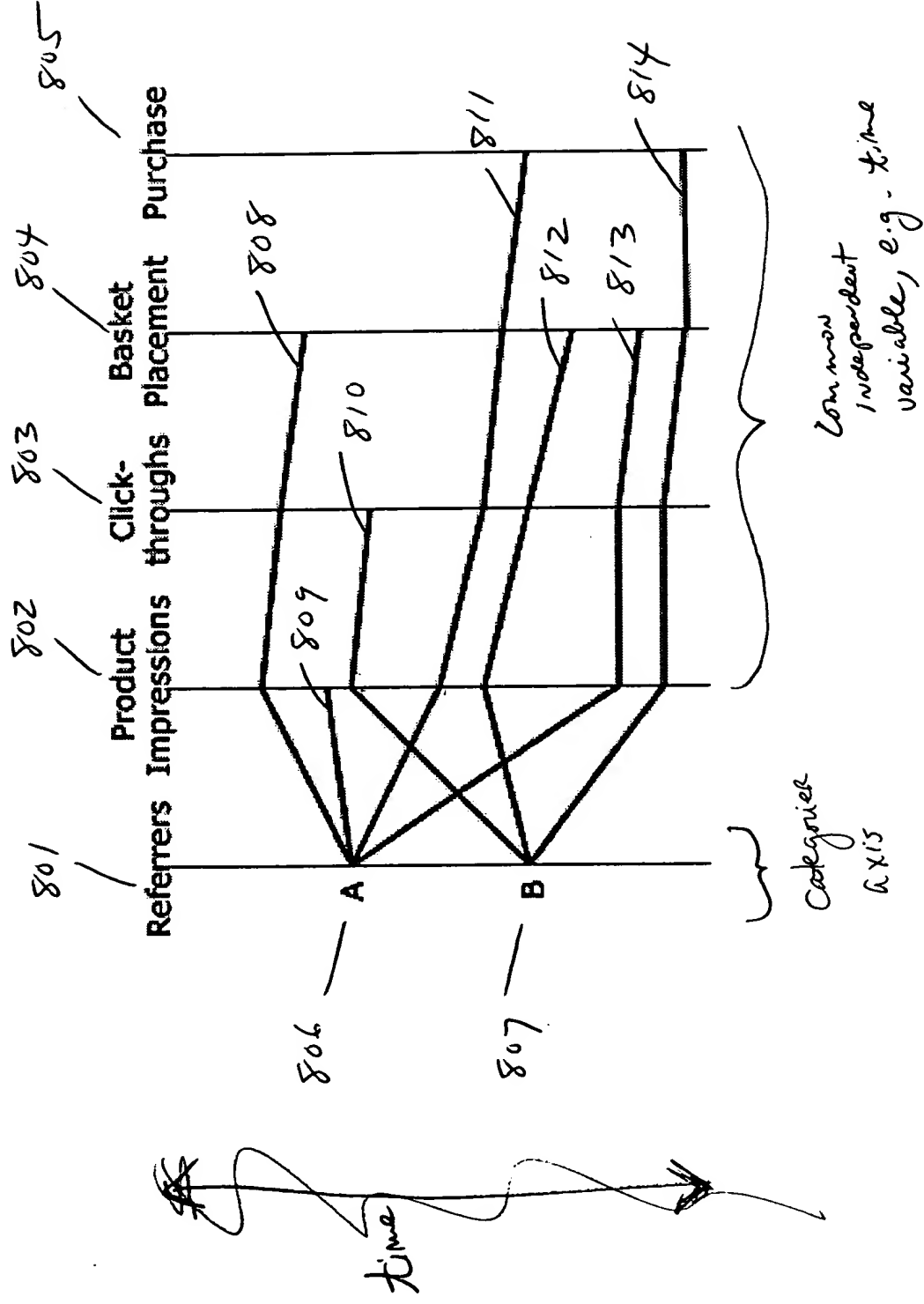


Figure 8: An example of a micro-conversion visualization with a parallel coordinate system

900

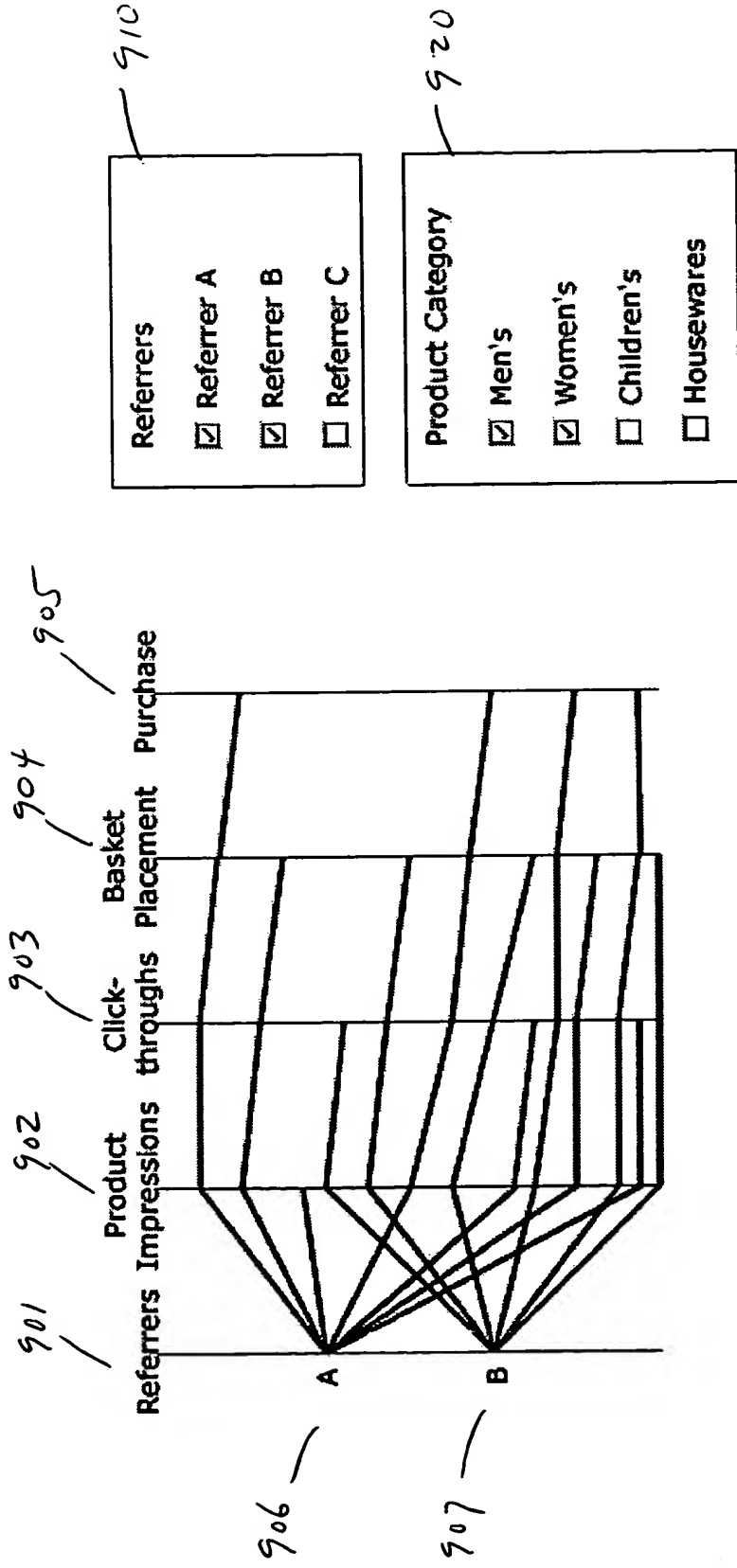


Figure 9: An example of a micro-conversion visualization with filters

1000

DOTDID" 88885960

Timestamp	Session ID	Store	Referrer	Current Page	Links
T4	S3	ST1	R3	Home	A, B, P1, Search
T7	S3	ST1	Home	P1	Basket
T18	S3	ST1	P1	Home	A, B, P1, Search
T22	S3	ST1	Home	A	A1, A2
T23	S3	ST2	ST1	Home	B, C, D, Search
T24	S3	ST2	Home	Search	
T25	S3	ST2	Search	Search Results	C2, C3, D1
T26	S3	ST2	Search Results	C2	Basket, C
T27	S3	ST2	C2	Search Results	C2, C3, D1
T28	S3	ST2	Search Results	C3	Basket, C
T29	S3	ST3	ST2	Home	A, B, C, D, Search
T30	S3	ST3	Home	Search	
T31	S3	ST3	Search	Search Results	A1, B1, C3, D2
T32	S3	ST3	Search Results	D2	Basket, D
T33	S3	ST3	D2	Basket	Purchase, Home
T34	S3	ST3	Basket	Home	A, B, C, D, Search
T35	S3	ST3	Home	D	D1, D2, D3
T36	S3	ST3	D	D3	Basket, D
T37	S3	ST3	D3	Basket	Purchase, Home
T38	S3	ST3	Basket	Purchase	Thank You
T39	S3	ST3	Purchase	Thank You	Home

Figure 10: An example of a session browsing more than one online stores

1100

DOTDID" 888E5950

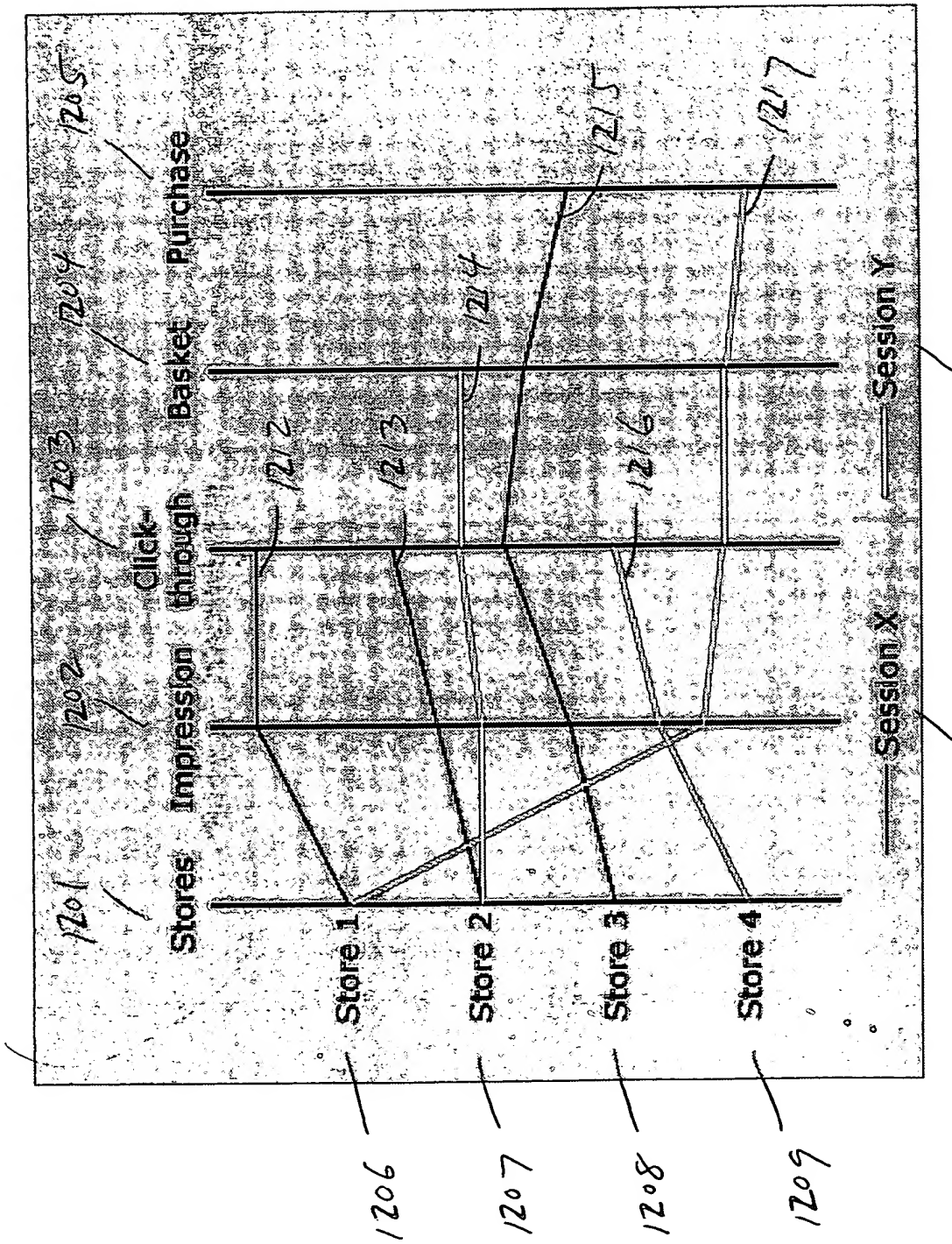
1101 1102 1103 1104

Product impressions	Clickthroughs	Basket placement	Purchase
T4, P1, ST1	T7, P1, ST1	T33, D2, ST3	T38, D2, ST3
T18, P1, ST1	T26, C2, ST2	T37, D3, ST3	T38, D3, ST3
T22, A1, ST1	T28, C3, ST2		
T22, A2, ST1	T32, D2, ST3		
T25, C1, ST2	T36, D3, ST3		
T25, C3, ST2			
T25, D1, ST2			
T27, C2, ST2			
T27, C3, ST2			
T27, D1, ST2			
T31, A1, ST3			
T31, B1, ST3			
T31, C3, ST3			
T31, D2, ST3			
T35, D1, ST3			
T35, D2, ST3			
T35, D3, ST3			

Figure 11: An example of micro-conversions of a session browsing more than one online stores

1200

Category 5 = 200
00101010" 8888960



1210
sub category
by store session = set of events

Figure 12: An example of visualizing shopping activities in more than one online stores